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~~PA~~ 000293037  
Erin Willard

**Monroe Energy, LLC**  
4101 Post Road  
Trainer, PA 19061  
(610) 364-8000

September 18, 2020

**USPS 9405 5036 9930 0027 1926 33**

Mr. James Rebarchak  
Commonwealth of Pennsylvania  
Department of Environmental Protection  
Southeast Regional Office  
2 East Main Street  
Norristown, PA 19401

**Re: Monroe Energy, LLC – Trainer Refinery  
40 CFR 63, Subpart UUU Semiannual Report - REVISED  
Reporting Period: January 1, 2020 – June 30, 2020**

Mr. Rebarchak:

In accordance with 40 CFR 63 Subpart UUU, Monroe Energy, LLC's Trainer Refinery hereby submits this revised semi-annual compliance report (per §63.1575(b)(2)) for the period beginning January 1, 2020 and ending June 30, 2020. Compliance reporting for the applicable MACT II emission limitations and work practices are detailed in the enclosed appendices.

Should you have any questions or comments regarding this report, please contact Leia Heritage at 610-592-4331 or myself at (610) 235-6106.

Sincerely,

Elizabeth Clapp, P.E.  
Environmental Leader

Attachment 1 - Responsible Official Certification  
Attachment 2 - Excess Emission and Monitoring System Performance Summary  
Attachment 3 - UUU Deviation Summary and Corrective Actions  
Attachment 4 - Process Descriptions  
Attachment 5 - Performance Testing Information  
Attachment 6 - Detailed CEMS Downtime

cc: Office of Air Enforcement and Compliance Assistance (3AP20)  
U.S. EPA, Region III  
1650 Arch Street  
Philadelphia, Pa 19103-2029  
**USPS 9405 5036 9930 0027 1926 40**



**Monroe Energy, LLC**  
4101 Post Road  
Trainer, PA 19061  
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**Responsible Official Certification**

Based upon information and belief formed after a reasonable inquiry, I, as a responsible official of the above-mentioned facility, certify the information contained in this report is accurate and true to the best of my knowledge.

A handwritten signature in blue ink, reading "Mark Schuck".

September 17, 2020

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Mark Schuck,  
VP, Refinery Operations

Date

**Attachment 2 - Excess Emission and Monitoring System Performance Summary**

# **EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE SUMMARY REPORT**

Pollutant (Circle One):      SO<sub>2</sub>      NO<sub>x</sub>      TRS      H<sub>2</sub>S      **CO**      Opacity

Reporting period dates:    From    **January 1, 2020**                      to    **June 30, 2020**

Company:    **Monroe Energy, LLC**

Emission Limitation:    **500 ppm (1-hour average)**

Address:    **4101 Post Rd, Trainer PA 19061**

Monitor Manufacturer:    **Servomex**

Model No.:                      **04900C1-4202**

Date of Latest CMS Certification or Audit:    **6/25/2020 (Linearity Test)**

Process Unit(s) Description:    **FCCU**

Total source operating time in reporting period :    **4368 hours**

<b>Emission data summary <sup>1</sup></b>		<b>CMS performance summary <sup>1</sup></b>	
1. Duration of excess emissions in the reporting period due to:		1. CMS downtime in the reporting period due to:	
a. Startup/shutdown	<b>0</b>	a. Monitor equipment malfunctions	<b>0</b>
b. Control equipment problems	<b>0</b>	b. Non-Monitor equipment malfunctions	<b>0</b>
c. Process problems	<b>0</b>	c. Quality assurance calibration	<b>0</b>
d. Other known causes	<b>0</b>	d. Other known causes	<b>17</b>
e. Unknown causes	<b>0</b>	e. Unknown causes	<b>0</b>
2. Total duration of excess emissions	<b>0</b>	2. Total CMS Downtime	<b>17</b>
3. Total duration of excess emissions x (100) / [Total source operating time]	<b>0.00 %</b>	3. [Total CMS Downtime] x (100) / [Total source operating time]	<b>0.39 %</b>

**Notes:**

On a separate page, describe any changes since last quarter in CMS, process or controls. **No changes to the CMS, process, or controls have occurred since last reporting period.**

# EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE SUMMARY REPORT

Pollutant (Circle One): SO<sub>2</sub> NO<sub>x</sub> TRS H<sub>2</sub>S CO Opacity

Reporting period dates: From January 1, 2020 to June 30, 2020

Company: Monroe Energy, LLC

Emission Limitation: 250 ppm (12- hour rolling average)

Address: 4101 Post Rd, Trainer PA 19061

Monitor Manufacturer: AMETEK

Model No.: Model 921

Date of Latest CMS Certification or Audit: 6/2/2020 (Linearity Test)

Process Unit(s) Description: Claus Sulfur Recovery Plant

Total source operating time in reporting period: 4367 hours

Emission data summary <sup>1</sup>		CMS performance summary <sup>1</sup>	
1. Duration of excess emissions in the reporting period due to:		1. CMS downtime in the reporting period due to:	
a. Startup/shutdown	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-Monitor equipment malfunctions	0
c. Process problems	13	c. Quality assurance calibration	6
d. Other known causes	0	d. Other known causes	39
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	13	2. Total CMS Downtime	45
3. Total duration of excess emissions x (100) / [Total source operating time]	0.30 %	3. [Total CMS Downtime] x (100) / [Total source operating time]	1.03 %

**Note:** On a separate page, describe any changes since last quarter in CMS, process or controls. **No changes to the CMS, process, or controls have occurred since last reporting period.**

**Attachment 3 - UUU Deviation Summary and Corrective Actions**

If any deviations occur from standards that use CEMS for compliance, refer to Appendix E to view detailed CEMS downtime information.

**Source:** SRU

**Standard:** 250 PPM SO<sub>2</sub> 12-Hr Rolling Average Limit - The Claus Sulfur Recovery Plant experienced an upset due to hydrocarbons entering the sour water stripper feed system. The hydrocarbons were flashed overhead in the sour water stripper and on to the sulfur recovery plant. The hydrocarbons were destroyed in the main burner of the sulfur recovery unit and this caused the emissions to climb in the incinerator.

**Source:** FCCU

**Standard:** 500 PPMVD CO 1-Hr Average Limit

There were no deviations from this standard during the reporting period.

**Source:** FCCU

**Standard:** L:G Ratio  $\geq$  0.08 (Per November 22, 2005 AMP) – Demonstrates §63.1564 Compliance for PM and Opacity Standards

There were no deviations from this standard during the reporting period.



**Source:** Platformer

**Standard:** 97% HCl reduction with a control device; weekly average Chloride content on catalyst entering Chlorsorb  $\leq$  1.35% by weight and weekly average Chloride content on catalyst exiting Chlorsorb  $\leq$  1.8% by weight, 3 times per week on non-consecutive days during catalyst regeneration.

Start	Stop	Duration	Caused by SSM event?	Nature and Cause of Event?	Corrective Action Taken?
1/5/2020 0:00	1/11/2020 23:59	1 week	No	The weekly average chloride concentration was 2.26 wt%. This exceedance was caused by catalyst bridging in the Chlorsorb section of the regenerator.	PCE injection was reduced in the regenerator, and regenerator was shut down for low coke on 1/8. Chloride levels then returned to normal operation.

**Source:** Platformer

**Standard:** Daily Average Vent Gas Inlet Temperature  $\leq$  350°F

There were no deviations from this standard during the reporting period.

**Attachment 4 - Process Descriptions**

### **FCCU Process Description**

The Fluidized Catalytic Cracking Unit (FCCU) is a refinery process unit used for the production of gasoline. Heavy oil, which is used as the feedstock, is catalytically cracked in a fluidized catalyst bed to produce C3 olefins, C4 olefins, and isobutanes. In the cracking reactor, heavy carbonaceous materials (coke) become deposited on the catalyst, requiring continuous regeneration. The catalyst is circulated to a fluidized bed regenerator where these deposits are combusted. Most of the catalyst particles entrained in the regenerator flue gas are then removed in two stages of cyclones within the regenerator vessel and then are returned to the fluidized bed reactor.

At the Trainer Refinery, the FCCU control devices include a CO Boiler for CO reduction, an Enhanced Selective Non-Catalytic Reduction (eSNCR) unit for NO<sub>x</sub> reduction, an electrostatic precipitator for PM reduction and a wet gas scrubber for PM and SO<sub>2</sub>.

### **Catalytic Reforming Unit (Platformer Unit)**

The refinery operates one Catalytic Reforming Unit. The purpose of the Platformer is to upgrade low octane feed sources, Heavy Naphtha and Heavy Isocrackate, into a high-octane gasoline component and hydrogen gas. The feed combined with hydrogen recycle gas is heated and passed over a platinum catalyst, where it is converted from low octane naphtha to a gasoline-blending component with a design research octane number in the range of 97 - 101.

### **SRU**

The Claus Sulfur Recovery Unit is designed to react feed H<sub>2</sub>S and SO<sub>2</sub> into recoverable sulfur using two trains in parallel. Normally only one train is required to be on-line. The feeds to the unit are sour water gases and acid gases from the Sour Water Stripper and the Amine Unit. Each train consists of a thermal reactor, three catalytic reactors, a steam generator and a 4 pass sulfur condenser. Medium and low-pressure steam is generated in the condensers. The sulfur product is stored in a common heated pit until shipped out by railcar.

The Scot unit is designed to treat the tail gas from both trains of the Sulfur Recovery Unit. The Scot Unit reduces the H<sub>2</sub>S content in the tail gas before it is sent to the incinerator stack. The combination of the Sulfur and Scot Units recovers about 99.8% of the sulfur in the feed streams. The Scot Unit consists of an in-line burners, catalytic reactor, quench tower, amine absorber, stripper, and incinerator.

### **Bypass Lines**

The FCCU does not have any bypass lines. The Platformer Chlorsorb Unit line was not bypassed during this reporting period. The Sulfur Recovery Unit line was not bypassed during this reporting period.

**Attachment 5 - Performance Testing Information**

No performance tests were conducted during this reporting period.

**Attachment 6 - Detailed CEMS Downtime**

Detailed CEMS downtime attached for the SRU.

## Downtime Events - Duration

Plant: MONROE ENERGY, LLC.  
Report Period: 01/01/2020 00:00 Through 06/30/2020 23:59  
Time Online Criteria: 1 minute(s)

Source: SRUSTACK

Parameter: O2

Interval: 001H

Incident ID	Start Date/Time	End Date/Time	Duration (hh:mm)	Reason Code - Description Action Code - Description
1	01/17/2020 07:00	01/17/2020 10:59	4h - 0m	00 - None
2	02/25/2020 08:00	02/25/2020 12:59	5h - 0m	00 - None
3	02/26/2020 09:00	02/26/2020 10:59	2h - 0m	00 - None
4	02/26/2020 13:00	02/26/2020 13:59	1h - 0m	00 - None
5	03/11/2020 07:00	03/11/2020 09:59	3h - 0m	00 - None
6	05/06/2020 06:00	05/06/2020 11:59	6h - 0m	00 - None
7	05/07/2020 06:00	05/07/2020 10:59	5h - 0m	00 - None
8	05/09/2020 06:00	05/09/2020 09:59	4h - 0m	00 - None
9	05/10/2020 06:00	05/10/2020 06:59	1h - 0m	00 - None
10	05/12/2020 07:00	05/12/2020 07:59	1h - 0m	00 - None
11	05/22/2020 09:00	05/22/2020 09:59	1h - 0m	00 - None
12	06/02/2020 07:00	06/02/2020 09:59	3h - 0m	00 - None
Number of Events:			12	
Total Duration:			36h - 0m	

Source: SRUSTACK

Parameter: SO2

Interval: 001H

Incident ID	Start Date/Time	End Date/Time	Duration (hh:mm)	Reason Code - Description Action Code - Description
13	01/14/2020 05:00	01/14/2020 08:59	4h - 0m	00 - None
14	01/17/2020 07:00	01/17/2020 10:59	4h - 0m	00 - None
15	02/25/2020 08:00	02/25/2020 12:59	5h - 0m	00 - None
16	02/26/2020 09:00	02/26/2020 10:59	2h - 0m	00 - None

\* Indicates duration incident could have additional data prior to the start date or following the end date.

## Downtime Events - Duration

Plant: MONROE ENERGY, LLC.  
Report Period: 01/01/2020 00:00 Through 06/30/2020 23:59  
Time Online Criteria: 1 minute(s)

Source: SRUSTACK

Parameter: SO2

Interval: 001H

Incident ID	Start Date/Time	End Date/Time	Duration (hh:mm)	Reason Code - Description Action Code - Description
17	02/26/2020 13:00	02/26/2020 13:59	1h - 0m	00 - None
18	03/11/2020 07:00	03/11/2020 09:59	3h - 0m	00 - None
19	05/06/2020 06:00	05/06/2020 11:59	6h - 0m	00 - None
20	05/07/2020 06:00	05/07/2020 10:59	5h - 0m	00 - None
21	05/08/2020 06:00	05/08/2020 06:59	1h - 0m	00 - None
22	05/09/2020 06:00	05/09/2020 09:59	4h - 0m	00 - None
23	05/11/2020 06:00	05/11/2020 08:59	3h - 0m	00 - None
24	05/12/2020 07:00	05/12/2020 07:59	1h - 0m	00 - None
25	05/22/2020 09:00	05/22/2020 09:59	1h - 0m	00 - None
26	06/02/2020 07:00	06/02/2020 09:59	3h - 0m	00 - None
27	06/16/2020 06:00	06/16/2020 07:59	2h - 0m	00 - None
<b>Number of Events:</b>			15	
<b>Total Duration:</b>			45h - 0m	

\* Indicates duration incident could have additional data prior to the start date or following the end date.